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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,399	07/14/2003	Christopher Dean	205,905	7669

7590 05/25/2006

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EXAMINER

DOUGLAS, JOHN CHRISTOPHER

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/619,399	Applicant(s) DEAN, CHRISTOPHER	
	Examiner John C. Douglas	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-14 is/are rejected.
- 7) ☐ Claim(s) 7-9 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/22/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 11/22/2005 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crossland (US 5837130). Crossland discloses where the effluent of a fluid catalytic cracking is fed to a distillation column and where a naphtha side stream is removed from the distillation column and passed to separate distillation column reactor that performs hydrodesulfurization which produces a low sulfur content naphtha stream that is removed from the reactor (see Crossland, column 1, lines 41-57, column 3, lines 25-43, and column 6, lines 26-35 and naphtha boils between 86-340 degrees F).

Crossland does not disclose where the low-sulfur content naphtha is returned to the distillation column and where a low-sulfur content naphtha stream is withdrawn from the distillation column.

However, Crossland discloses that a hydrodesulfurized stream can be returned to the FCC reactor (see Crossland, column 8, lines 17-19).

According to MPEP § 2144.04 IV. C. citing *In re Gibson*, 39 F.2d 975 (CCPA 1930), the selection of any order of mixing ingredients is prima facie obvious.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Crossland to include returning the treated naphtha stream to the distillation column because the selection of any order of process steps is prima facie obvious. In addition, it would have been obvious that a low content naphtha stream is withdrawn from the distillation column because low sulfur naphtha is being recycled to the distillation column from the hydrodesulfurization unit.

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5. With respect to claim 5, Crossland discloses where the sulfur compounds present in the hydrocarbon streams are mercaptans and thiophenic compounds (see Crossland, column 2, lines 3-7).

6. With respect to claim 6, Crossland discloses a treated heavy gas oil fraction that is returned to the distillation column (see Crossland, column 8, lines 20-34).

7. With respect to claim 10, Crossland discloses removing a light cycle oil fraction and a heavy cycle oil fraction from the distillation column (see Crossland, column 7, line 61 – column 8, line 43 and Figure 2).

8. With respect to claim 11, Crossland does not disclose where the side column bottom stream is returned above the take-off position of the light cycle oil stream. However, discloses a treated heavy gas oil fraction that is returned to the distillation column (see Crossland, column 8, lines 20-34) and according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), a selection of any order of performing process steps is prima facie obvious in the absence of new and unexpected results. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Crossland to include changing the location of adding the treated gas fraction.

9. With respect to claim 12, Crossland discloses where the hydrodesulfurization catalyst structures are plates or screen wire (see Crossland, column 5, lines 49-51).

10. With respect to claims 13 and 14, Crossland discloses that hydrogen is preferably fed below the catalyst, which suggest hydrogen can be fed above the catalyst (see Crossland, column 6, lines 30-31). Therefore, it would have been obvious to one

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having skill in the art at the time of the invention to feed hydrogen both above and below the catalyst because according to *In re Harza*, 274 F.2d 669 (CCPA 1960), mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

11. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crossland in view of Hearn (US 5779883). Crossland discloses everything in claim 1 (see paragraph 4), but does not disclose where the recovered low sulfur content naphtha contains not more than 30 ppm of sulfur.

However, Hearne discloses a treated naphtha stream with 35 ppm sulfur (see Hearne, column 8, lines 4-6 and Table V and MPEP § 2144.05).

Hearne discloses that sulfur is always considered to be a contaminant (see Hearne, column 1, lines 41-46).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Crossland to include a treated naphtha stream with 35 ppm sulfur because sulfur is always considered a contaminant in need of removal.

Allowable Subject Matter

12. Claims 7-9 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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13. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose where the low-sulfur content naphtha is returned to the fractionation column in the form of a first stream comprising light and medium catalytic cracked naphtha and a second stream comprising heavy catalytic cracked naphtha.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCD



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700